

Symbol	Typ	Titel
H	Sektion	SECTION H — ELECTRICITY
H02	Klasse	GENERATION, CONVERSION, OR DISTRIBUTION OF ELECTRIC POWER
H02P	Unterklasse	CONTROL OR REGULATION OF ELECTRIC MOTORS, GENERATORS, OR DYNAMO-ELECTRIC CONVERTERS; CONTROLLING TRANSFORMERS, REACTORS OR CHOKE COILS (structure of the starter, brake, or other control devices, <u>see</u> the relevant subclasses, e.g. mechanical brake F16D, mechanical speed regulator G05D, variable resistor H01C, starter switch H01H; systems for regulating electric or magnetic variables using transformers, reactors or choke coils G05F; arrangements structurally associated with motors, generators, dynamo-electric converters, transformers, reactors or choke coils, <u>see</u> the relevant subclasses, e.g. H01F, H02K; connection or control of one generator, transformer, reactor, choke coil, or dynamo-electric converter with regard to conjoint operation with similar or other source of supply H02J; control or regulation of static converters H02M) [4]
H02P 1/00	Hauptgruppe	<i>Arrangements for starting electric motors or dynamo-electric converters (starting of synchronous motors with electronic commutators H02P 6/20, H02P 6/22; starting dynamo-electric motors rotating step by step H02P 8/04; vector control H02P 21/00) [4, 2006.01]</i>
H02P 1/02	1-Punkt Untergruppe	. Details
H02P 1/04	2-Punkt Untergruppe	. . Means for controlling progress of starting sequence in dependence upon time or upon current, speed, or other motor parameter
H02P 1/06	3-Punkt Untergruppe	. . . Manually-operated multi-position starters
H02P 1/08	3-Punkt Untergruppe	. . . Manually-operated on/off switch controlling power-operated multi-position switch or impedances for starting a motor
H02P 1/10	3-Punkt Untergruppe	. . . Manually-operated on/off switch controlling relays or contactors operating sequentially for starting a motor (sequence determined by power-operated multi-position switch H02P 1/08)
H02P 1/12	3-Punkt Untergruppe	. . . Switching devices centrifugally operated by the motor
H02P 1/14	3-Punkt Untergruppe	. . . Pressure-sensitive resistors centrifugally operated by the motor
H02P 1/16	1-Punkt Untergruppe	. for starting dynamo-electric motors or dynamo-electric converters
H02P 1/18	2-Punkt Untergruppe	. . for starting an individual dc motor
H02P 1/20	3-Punkt Untergruppe	. . . by progressive reduction of resistance in series with armature winding
H02P 1/22	3-Punkt Untergruppe	. . . in either direction of rotation
H02P 1/24	2-Punkt Untergruppe	. . for starting an individual ac commutator motor (starting of ac/dc commutator motors H02P 1/18)
H02P 1/26	2-Punkt Untergruppe	. . for starting an individual polyphase induction motor
H02P 1/28	3-Punkt Untergruppe	. . . by progressive increase of voltage applied to primary circuit of motor
H02P 1/30	3-Punkt Untergruppe	. . . by progressive increase of frequency of supply to primary circuit of motor
H02P 1/32	3-Punkt Untergruppe	. . . by star/delta switching
H02P 1/34	3-Punkt Untergruppe	. . . by progressive reduction of impedance in secondary circuit
H02P 1/36	4-Punkt Untergruppe	 the impedance being a liquid resistance
H02P 1/38	3-Punkt Untergruppe	. . . by pole-changing

Symbol	Typ	Titel
H02P 1/40	3-Punkt Untergruppe	. . . in either direction of rotation
H02P 1/42	2-Punkt Untergruppe	. . for starting an individual single-phase induction motor
H02P 1/44	3-Punkt Untergruppe	. . . by phase-splitting with a capacitor
H02P 1/46	2-Punkt Untergruppe	. . for starting an individual synchronous motor
H02P 1/48	3-Punkt Untergruppe	. . . by pole-changing
H02P 1/50	3-Punkt Untergruppe	. . . by changing over from asynchronous to synchronous operation (H02P 1/48 takes precedence)
H02P 1/52	3-Punkt Untergruppe	. . . by progressive increase of frequency of supply to motor
H02P 1/54	2-Punkt Untergruppe	. . for starting two or more dynamo-electric motors
H02P 1/56	3-Punkt Untergruppe	. . . simultaneously
H02P 1/58	3-Punkt Untergruppe	. . . sequentially
H02P 3/00	Hauptgruppe	Arrangements for stopping or slowing electric motors, generators, or dynamo-electric converters (stopping of synchronous motors with electronic commutators H02P 6/24 ; stopping dynamo-electric motors rotating step by step H02P 8/24 ; vector control H02P 21/00) [2, 4, 2006.01]
H02P 3/02	1-Punkt Untergruppe	. Details
H02P 3/04	2-Punkt Untergruppe	. . Means for stopping or slowing by a separate brake, e.g. friction brake, eddy-current brake (brakes F16D, H02K 49/00) [2]
H02P 3/06	1-Punkt Untergruppe	. for stopping or slowing an individual dynamo-electric motor or dynamo-electric converter [2]
H02P 3/08	2-Punkt Untergruppe	. . for stopping or slowing a dc motor [2]
H02P 3/10	3-Punkt Untergruppe	. . . by reversal of supply connections
H02P 3/12	3-Punkt Untergruppe	. . . by short-circuit or resistive braking
H02P 3/14	3-Punkt Untergruppe	. . . by regenerative braking
H02P 3/16	3-Punkt Untergruppe	. . . by combined electrical and mechanical braking
H02P 3/18	2-Punkt Untergruppe	. . for stopping or slowing an ac motor [2]
H02P 3/20	3-Punkt Untergruppe	. . . by reversal of phase sequence of connections to the motor
H02P 3/22	3-Punkt Untergruppe	. . . by short-circuit or resistive braking
H02P 3/24	3-Punkt Untergruppe	. . . by applying dc to the motor
H02P 3/26	3-Punkt Untergruppe	. . . by combined electrical and mechanical braking
H02P 4/00	Hauptgruppe	Arrangements specially adapted for regulating or controlling the speed or torque of electric motors that can be connected to two or more different voltage or current supplies (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; vector control H02P 21/00) [2006.01]
H02P 5/00	Hauptgruppe	Arrangements specially adapted for regulating or controlling the speed or torque of two or more electric motors (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; vector control H02P 21/00) [1, 2006.01]
H02P 5/04	Gelöscht	(transferred to H02P 29/04)
H02P 5/05	Gelöscht	(transferred to H02P 25/08)
H02P 5/06	Gelöscht	(covered by H02P 7/06)
H02P 5/08	Gelöscht	(covered by H02P 7/06-H02P 7/22)
H02P 5/10	Gelöscht	(covered by H02P 7/06-H02P 7/22)
H02P 5/12	Gelöscht	(covered by H02P 7/24)

Symbol	Typ	Titel
H02P 5/14	Gelöscht	(covered by H02P 7/26)
H02P 5/16	Gelöscht	(covered by H02P 7/28)
H02P 5/162	Gelöscht	(covered by H02P 7/282)
H02P 5/165	Gelöscht	(covered by H02P 7/285)
H02P 5/168	Gelöscht	(covered by H02P 7/288)
H02P 5/17	Gelöscht	(covered by H02P 7/29)
H02P 5/172	Gelöscht	(covered by H02P 7/292)
H02P 5/175	Gelöscht	(covered by H02P 7/295)
H02P 5/178	Gelöscht	(covered by H02P 7/298)
H02P 5/18	Gelöscht	(covered by H02P 7/30)
H02P 5/20	Gelöscht	(covered by H02P 7/32)
H02P 5/22	Gelöscht	(covered by H02P 7/34)
H02P 5/24	Gelöscht	(covered by H02P 7/34)
H02P 5/26	Gelöscht	(covered by H02P 7/34)
H02P 5/28	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 5/30	Gelöscht	(transferred to H02P 25/18)
H02P 5/32	Gelöscht	(transferred to H02P 25/18)
H02P 5/34	Gelöscht	(transferred to H02P 27/04)
H02P 5/36	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 5/38	Gelöscht	(transferred to H02P 25/32)
H02P 5/40	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 5/402	Gelöscht	(transferred to H02P 27/02)
H02P 5/405	Gelöscht	(transferred to H02P 25/26)
H02P 5/408	Gelöscht	(transferred to H02P 27/04)
H02P 5/41	Gelöscht	(transferred to H02P 27/06)
H02P 5/412	Gelöscht	(transferred to H02P 27/16)
H02P 5/415	Gelöscht	(transferred to H02P 23/00; H02P 27/05)
H02P 5/418	Gelöscht	(transferred to H02P 25/10)
H02P 5/42	Gelöscht	(transferred to H02P 25/28)
H02P 5/44	Gelöscht	(transferred to H02P 25/12; H02P 25/16)
H02P 5/46	1-Punkt Untergruppe	. for speed regulation of two or more dynamo-electric motors in relation to one another
H02P 5/48	2-Punkt Untergruppe	. . by comparing mechanical values representing the speeds
H02P 5/50	2-Punkt Untergruppe	. . by comparing electrical values representing the speeds
H02P 5/52	2-Punkt Untergruppe	. . additionally providing control of relative angular displacement
H02P 5/60	1-Punkt Untergruppe	. controlling combinations of dc and ac dynamo-electric motors (H02P 5/46 takes precedence) [2006.01]
H02P 5/68	1-Punkt Untergruppe	. controlling two or more dc dynamo-electric motors (H02P 5/46 , H02P 5/60 take precedence) [2006.01]
H02P 5/685	2-Punkt Untergruppe	. . electrically connected in series, i.e. carrying the same current [2006.01]
H02P 5/69	2-Punkt Untergruppe	. . mechanically coupled by gearing [2006.01]
H02P 5/695	3-Punkt Untergruppe	. . . Differential gearing [2006.01]
H02P 5/74	1-Punkt Untergruppe	. controlling two or more ac dynamo-electric motors (H02P 5/46 , H02P 5/60 take precedence) [2006.01]
H02P 5/747	2-Punkt Untergruppe	. . mechanically coupled by gearing [2006.01]
H02P 5/753	3-Punkt Untergruppe	. . . Differential gearing [2006.01]
H02P 6/00	Hauptgruppe	Arrangements for controlling synchronous motors or other dynamo-electric motors with electronic

Symbol	Typ	Titel
commutators in dependence on the rotor position; Electronic commutators therefor (stepping motors H02P 8/00; vector control H02P 21/00) [3, 4, 6]		
H02P 6/04	1-Punkt Untergruppe	. Arrangements for controlling or regulating speed or torque of more than one motor [6]
H02P 6/06	1-Punkt Untergruppe	. Arrangements for speed regulation of a single motor wherein the motor speed is measured and compared with a given physical value so as to adjust the motor speed [6]
H02P 6/08	1-Punkt Untergruppe	. Arrangements for controlling the speed or torque of a single motor [6]
H02P 6/10	2-Punkt Untergruppe	. . providing reduced torque ripple; controlling torque ripple [6]
H02P 6/12	1-Punkt Untergruppe	. Monitoring commutation; Providing indication of commutation failure [6]
H02P 6/14	1-Punkt Untergruppe	. Electronic commutators [6]
H02P 6/16	2-Punkt Untergruppe	. . Circuit arrangements for detecting position (structural arrangement of position sensors H02K 29/06) [6]
H02P 6/18	3-Punkt Untergruppe	. . . without separate position detecting element, e.g. using back-emf in windings [6]
H02P 6/20	1-Punkt Untergruppe	. Arrangements for starting (H02P 6/08, H02P 6/22 take precedence) [6]
H02P 6/22	1-Punkt Untergruppe	. Arrangements for starting in a selected direction of rotation [6]
H02P 6/24	1-Punkt Untergruppe	. Arrangements for stopping [6]
H02P 7/00	Hauptgruppe	Arrangements for regulating or controlling the speed or torque of electric dc-motors (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; vector control H02P 21/00) [2, 2006.01]
H02P 7/01	Gelöscht	(transferred to H02P 4/00)
H02P 7/04	Gelöscht	(transferred to H02P 29/04)
H02P 7/05	Gelöscht	(transferred to H02P 25/08)
H02P 7/06	1-Punkt Untergruppe	. for regulating or controlling an individual dc dynamo-electric motor by varying field or armature current
H02P 7/08	2-Punkt Untergruppe	. . by manual control without auxiliary power
H02P 7/10	3-Punkt Untergruppe	. . . of motor field only
H02P 7/12	4-Punkt Untergruppe	 Switching field from series to shunt excitation or <u>vice versa</u>
H02P 7/14	3-Punkt Untergruppe	. . . of voltage applied to the armature with or without control of field
H02P 7/18	2-Punkt Untergruppe	. . by master control with auxiliary power
H02P 7/20	3-Punkt Untergruppe	. . . using multi-position switch, e.g. drum, controlling motor circuit by means of relays (H02P 7/24, H02P 7/30 take precedence)
H02P 7/22	3-Punkt Untergruppe	. . . using multi-position switch, e.g. drum, controlling motor circuit by means of pilot-motor-operated multi-position switch or pilot-motor-operated variable resistance (H02P 7/24, H02P 7/30 take precedence)
H02P 7/24	3-Punkt Untergruppe	. . . using discharge tubes or semiconductor devices
H02P 7/26	4-Punkt Untergruppe	 using discharge tubes
H02P 7/28	4-Punkt Untergruppe	 using semiconductor devices
H02P 7/282	5-Punkt Untergruppe	 controlling field supply only [4]
H02P 7/285	5-Punkt Untergruppe	 controlling armature supply only [4]
H02P 7/288	6-Punkt Untergruppe	 using variable impedance [4]
H02P 7/29	6-Punkt Untergruppe	 using pulse modulation [4]

Symbol	Typ	Titel
H02P 7/292	6-Punkt Untergruppe	 using static converters, e.g. ac to dc [4]
H02P 7/295	7-Punkt Untergruppe	 of the kind having one thyristor or the like in series with the power supply and the motor [4]
H02P 7/298	5-Punkt Untergruppe	 controlling armature and field supply [4]
H02P 7/30	3-Punkt Untergruppe	. . . using magnetic devices with controllable degree of saturation, i.e. transducers
H02P 7/32	3-Punkt Untergruppe	. . . using armature-reaction-excited machines, e.g. metadyne, amplidyne, rototrol
H02P 7/34	3-Punkt Untergruppe	. . . using Ward-Leonard arrangements
H02P 7/36	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/38	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/40	Gelöscht	(transferred to H02P 25/24)
H02P 7/42	Gelöscht	(transferred to H02P 27/04)
H02P 7/44	Gelöscht	(transferred to H02P 27/04)
H02P 7/46	Gelöscht	(transferred to H02P 27/05)
H02P 7/48	Gelöscht	(transferred to H02P 25/20)
H02P 7/50	Gelöscht	(transferred to H02P 25/12)
H02P 7/52	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/54	Gelöscht	(transferred to H02P 25/18)
H02P 7/56	Gelöscht	(transferred to H02P 25/18)
H02P 7/58	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/60	Gelöscht	(transferred to H02P 25/32)
H02P 7/62	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/622	Gelöscht	(transferred to H02P 27/02)
H02P 7/625	Gelöscht	(transferred to H02P 25/26)
H02P 7/628	Gelöscht	(transferred to H02P 27/04)
H02P 7/63	Gelöscht	(transferred to H02P 27/06)
H02P 7/632	Gelöscht	(transferred to H02P 27/16)
H02P 7/635	Gelöscht	(transferred to H02P 23/00; H02P 27/05)
H02P 7/638	Gelöscht	(transferred to H02P 25/10)
H02P 7/64	Gelöscht	(transferred to H02P 25/28)
H02P 7/66	Gelöscht	(transferred to H02P 25/30)
H02P 7/67	Gelöscht	(transferred to H02P 5/00)
H02P 7/68	Gelöscht	(transferred to H02P 5/68)
H02P 7/685	Gelöscht	(transferred to H02P 5/685)
H02P 7/69	Gelöscht	(transferred to H02P 5/69)
H02P 7/695	Gelöscht	(transferred to H02P 5/695)
H02P 7/74	Gelöscht	(transferred to H02P 5/74)
H02P 7/747	Gelöscht	(transferred to H02P 5/747)
H02P 7/753	Gelöscht	(transferred to H02P 5/753)
H02P 7/80	Gelöscht	(transferred to H02P 5/60)
H02P 8/00	Hauptgruppe	Arrangements for controlling dynamo-electric motors rotating step by step (vector control H02P 21/00) [2, 6, 2006.01]
H02P 8/02	1-Punkt Untergruppe	. specially adapted for single-phase or bi-pole stepper motors, e.g. watch-motors, clock-motors [6]
H02P 8/04	1-Punkt Untergruppe	. Arrangements for starting [6]
H02P 8/06	2-Punkt Untergruppe	. . in selected direction of rotation [6]
H02P 8/08	2-Punkt Untergruppe	. . Determining position before starting [6]

Symbol	Typ	Titel
H02P 8/10	2-Punkt Untergruppe	. . Shaping pulses for starting; Boosting current during starting [6]
H02P 8/12	1-Punkt Untergruppe	. Control or stabilisation of current [6]
H02P 8/14	1-Punkt Untergruppe	. Arrangements for controlling speed or speed and torque (H02P 8/12, H02P 8/22 take precedence) [6]
H02P 8/16	2-Punkt Untergruppe	. . Reducing energy dissipated or supplied [6]
H02P 8/18	2-Punkt Untergruppe	. . Shaping of pulses, e.g. to reduce torque ripple [6]
H02P 8/20	2-Punkt Untergruppe	. . characterised by bidirectional operation [6]
H02P 8/22	1-Punkt Untergruppe	. Control of step size; Intermediate stepping, e.g. micro-stepping [6]
H02P 8/24	1-Punkt Untergruppe	. Arrangements for stopping (H02P 8/32 take precedence) [6]
H02P 8/26	2-Punkt Untergruppe	. . Memorising final pulse when stopping [6]
H02P 8/28	2-Punkt Untergruppe	. . Disconnecting power source when stopping [6]
H02P 8/30	2-Punkt Untergruppe	. . Holding position when stopped [6]
H02P 8/32	1-Punkt Untergruppe	. Reducing overshoot or oscillation, e.g. damping [6]
H02P 8/34	1-Punkt Untergruppe	. Monitoring operation (H02P 8/36 takes precedence) [6]
H02P 8/36	1-Punkt Untergruppe	. Protection against faults, e.g. against overheating, step-out; Indicating faults (emergency protective arrangements with automatic interruption of supply H02H 7/08) [6]
H02P 8/38	2-Punkt Untergruppe	. . the fault being step-out [6]
H02P 8/40	1-Punkt Untergruppe	. Special adaptations for controlling two or more stepping motors [6]
H02P 8/42	1-Punkt Untergruppe	. characterised by non-stepper motors being operated step by step [6]
H02P 9/00	Hauptgruppe	Arrangements for controlling electric generators for the purpose of obtaining a desired output (Ward-Leonard arrangements H02P 7/34 ; vector control H02P 21/00 ; feeding a network by two or more generators H02J ; for charging batteries H02J 7/14) [1, 2006.01]
H02P 9/02	1-Punkt Untergruppe	. Details
H02P 9/04	1-Punkt Untergruppe	. Control effected upon non-electric prime mover and dependent upon electric output value of the generator (effecting control of the prime mover in general, <u>see</u> the relevant class for such prime mover) [2]
H02P 9/06	1-Punkt Untergruppe	. Control effected upon clutch or other mechanical power transmission means and dependent upon electric output value of the generator (effecting control of the power transmission means, <u>see</u> the relevant class for such means) [2]
H02P 9/08	1-Punkt Untergruppe	. Control of generator circuit during starting or stopping of driving means, e.g. for initiating excitation [2]
H02P 9/10	1-Punkt Untergruppe	. Control effected upon generator excitation circuit to reduce harmful effects of overloads or transients, e.g. sudden application of load, sudden removal of load, sudden change of load [2]
H02P 9/12	2-Punkt Untergruppe	. . for demagnetising; for reducing effects of remanence; for preventing pole reversal [2]
H02P 9/14	1-Punkt Untergruppe	. by variation of field (H02P 9/08, H02P 9/10 take precedence) [2]
H02P 9/16	2-Punkt Untergruppe	. . due to variation of ohmic resistance in field circuit, using resistances switched in or out of circuit step by step
H02P 9/18	3-Punkt Untergruppe	. . . the switching being caused by a servomotor, measuring instrument, or relay
H02P 9/20	2-Punkt Untergruppe	. . due to variation of continuously-variable ohmic resistance

Symbol	Typ	Titel
H02P 9/22	3-Punkt Untergruppe	. . . comprising carbon pile resistance
H02P 9/24	2-Punkt Untergruppe	. . due to variation of make-to-break ratio of intermittently-operating contacts, e.g. using Tirrill regulator
H02P 9/26	2-Punkt Untergruppe	. . using discharge tubes or semiconductor devices (H02P 9/34 takes precedence) [2]
H02P 9/28	3-Punkt Untergruppe	. . . using discharge tubes
H02P 9/30	3-Punkt Untergruppe	. . . using semiconductor devices
H02P 9/32	2-Punkt Untergruppe	. . using magnetic devices with controllable degree of saturation (H02P 9/34 takes precedence) [2]
H02P 9/34	2-Punkt Untergruppe	. . using magnetic devices with controllable degree of saturation in combination with controlled discharge tube or controlled semiconductor device
H02P 9/36	2-Punkt Untergruppe	. . using armature-reaction-excited machines
H02P 9/38	2-Punkt Untergruppe	. . Self-excitation by current derived from rectification of both output voltage and output current of generator
H02P 9/40	1-Punkt Untergruppe	. by variation of reluctance of magnetic circuit of generator
H02P 9/42	1-Punkt Untergruppe	. to obtain desired frequency without varying speed of the generator
H02P 9/44	1-Punkt Untergruppe	. Control of frequency and voltage in predetermined relation, e.g. constant ratio
H02P 9/46	1-Punkt Untergruppe	. Control of asynchronous generator by variation of capacitor
H02P 9/48	1-Punkt Untergruppe	. Arrangements for obtaining a constant output value at varying speed of the generator, e.g. on vehicle (H02P 9/04-H02P 9/46 take precedence) [3]
H02P 11/00	Hauptgruppe	Arrangements for controlling dynamo-electric converters (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; vector control H02P 21/00 ; feeding a network in conjunction with a generator or another converter H02J) [4, 2006.01]
H02P 11/04	1-Punkt Untergruppe	. for controlling dynamo-electric converters having a dc output
H02P 11/06	1-Punkt Untergruppe	. for controlling dynamo-electric converters having an ac output
H02P 13/00	Hauptgruppe	Arrangements for controlling transformers, reactors or choke coils, for the purpose of obtaining a desired output (regulation systems using transformers, reactors or choke coils G05F; transformers H01F; feeding a network in conjunction with a generator or a converter H02J; control or regulation of converters H02M) [4]
H02P 13/06	1-Punkt Untergruppe	. by tap-changing; by rearranging interconnections of windings
H02P 13/08	1-Punkt Untergruppe	. by sliding current collector along winding
H02P 13/10	1-Punkt Untergruppe	. by moving core, coil winding, or shield, e.g. by induction regulator
H02P 13/12	1-Punkt Untergruppe	. by varying magnetic bias
H02P 15/00	Hauptgruppe	Arrangements for controlling dynamo-electric brakes or clutches (controlling speed of dynamo-electric motors by means of a separate brake H02P 29/04 , vector control H02P 21/00) [1, 2006.01]
H02P 15/02	1-Punkt Untergruppe	. Conjoint control of brakes and clutches [3]
H02P 17/00	Hauptgruppe	Arrangements for controlling dynamo-electric gears (vector control H02P 21/00) [3, 2006.01]
H02P 19/00	Gelöscht	(transferred to H02P 1/00; H02P 3/00; H02P 5/00; H02P 7/00; H02P 23/00-H02P 31/00)
H02P 19/02	Gelöscht	(transferred to H02P 29/02)
H02P 21/00	Hauptgruppe	Arrangements or methods for the control of electric machines by vector control, e.g. by control of field orientation [6, 2006.01]
H02P 21/02	1-Punkt Untergruppe	. specially adapted for optimising the efficiency at low load [2006.01]

Symbol	Type	Titel
H02P 21/04	1-Punkt Untergruppe	. specially adapted for very low speeds [2006.01]
H02P 21/05	1-Punkt Untergruppe	. specially adapted for damping motor oscillations, e.g. for reducing hunting [2006.01]
H02P 21/06	1-Punkt Untergruppe	. Rotor flux based control [2006.01]
H02P 21/08	2-Punkt Untergruppe	. Indirect field-oriented control, e.g. field phase angle calculation based on rotor voltage equation by adding slip frequency and speed proportional frequency [2006.01]
H02P 21/10	2-Punkt Untergruppe	. Direct field-oriented control [2006.01]
H02P 21/12	1-Punkt Untergruppe	. Stator flux based control [2006.01]
H02P 21/13	1-Punkt Untergruppe	. Observer control, e.g. using Luenberger observers or Kalman filters [2006.01]
H02P 21/14	1-Punkt Untergruppe	. Estimation or adaptation of machine parameters, e.g. rotor time constant, flux, speed, current or voltage [2006.01]
H02P 23/00	Hauptgruppe	Arrangements or methods for the control of ac-motors characterised by a control method other than vector control (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; of two or more motors H02P 5/00 ; of synchronous motors with electronic commutators H02P 6/00 ; of dc-motors H02P 7/00 ; of stepping motors H02P 8/00) [2006.01]
H02P 23/02	1-Punkt Untergruppe	. specially adapted for optimising the efficiency at low load [2006.01]
H02P 23/03	1-Punkt Untergruppe	. specially adapted for very low speeds [2006.01]
H02P 23/04	1-Punkt Untergruppe	. specially adapted for damping motor oscillations, e.g. for reducing hunting [2006.01]
H02P 23/06	1-Punkt Untergruppe	. Controlling the motor in four quadrants [2006.01]
H02P 23/08	1-Punkt Untergruppe	. Controlling based on slip frequency, e.g. adding slip frequency and speed proportional frequency [2006.01]
H02P 23/10	1-Punkt Untergruppe	. Controlling by adding a dc current (dc current braking H02P 3/24) [2006.01]
H02P 23/12	1-Punkt Untergruppe	. Observer control, e.g. using Luenberger observers or Kalman filters [2006.01]
H02P 23/14	1-Punkt Untergruppe	. Estimation or adaptation of motor parameters, e.g. rotor time constant, flux, speed, current or voltage [2006.01]
H02P 25/00	Hauptgruppe	Arrangements or methods for the control of ac-motors characterised by the kind of ac-motor or by structural details (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; of two or more motors H02P 5/00 ; of synchronous motors with electronic commutators H02P 6/00 ; of dc-motors H02P 7/00 ; of stepping motors H02P 8/00) [2006.01]
H02P 25/02	1-Punkt Untergruppe	. characterised by the kind of motor [2006.01]
H02P 25/04	2-Punkt Untergruppe	. Single phase motors, e.g. capacitor motors [2006.01]
H02P 25/06	2-Punkt Untergruppe	. Linear motors [2006.01]
H02P 25/08	2-Punkt Untergruppe	. Reluctance motors [2006.01]
H02P 25/10	2-Punkt Untergruppe	. Commutator motors, e.g. repulsion motors [2006.01]
H02P 25/12	3-Punkt Untergruppe	. . . with shiftable brushes [2006.01]
H02P 25/14	3-Punkt Untergruppe	. . . Universal motors (H02P 25/12 takes precedence) [2006.01]
H02P 25/16	1-Punkt Untergruppe	. characterised by the circuit arrangement or by the kind of wiring [2006.01]
H02P 25/18	2-Punkt Untergruppe	. with arrangements for switching the windings, e.g. with mechanical switches or relays [2006.01]
H02P 25/20	3-Punkt Untergruppe	. . . for pole-changing [2006.01]

Symbol	Typ	Titel
H02P 25/22	2-Punkt Untergruppe	. . Multiple windings ; Windings for more than three phases [2006.01]
H02P 25/24	2-Punkt Untergruppe	. . Variable impedance in stator or rotor circuit [2006.01]
H02P 25/26	3-Punkt Untergruppe	. . . with arrangements for controlling secondary impedance [2006.01]
H02P 25/28	2-Punkt Untergruppe	. . using magnetic devices with controllable degree of saturation, e.g. transducers [2006.01]
H02P 25/30	2-Punkt Untergruppe	. . the motor being controlled by a control effected upon an ac generator supplying it [2006.01]
H02P 25/32	2-Punkt Untergruppe	. . using discharge tubes [2006.01]
H02P 27/00	Hauptgruppe	Arrangements or methods for the control of ac-motors characterised by the kind of supply voltage (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; of two or more motors H02P 5/00 ; of synchronous motors with electronic commutators H02P 6/00 ; of dc-motors H02P 7/00 ; of stepping motors H02P 8/00) [2006.01]
H02P 27/02	1-Punkt Untergruppe	. using supply voltage with constant frequency and variable amplitude [2006.01]
H02P 27/04	1-Punkt Untergruppe	. using variable-frequency supply voltage, e.g. inverter or converter supply voltage [2006.01]
H02P 27/05	2-Punkt Untergruppe	. . using ac supply for both rotor and stator circuits, the frequency of supply to at least one circuit being variable [2006.01]
H02P 27/06	2-Punkt Untergruppe	. . using dc to ac converters or inverters (H02P 27/05 takes precedence) [2006.01]
H02P 27/08	3-Punkt Untergruppe	. . . with pulse width modulation [2006.01]
H02P 27/10	4-Punkt Untergruppe	 using bang-bang controllers [2006.01]
H02P 27/12	4-Punkt Untergruppe	 pulsing by guiding the flux-, current-, or voltage-vector on a circle or a closed curve, e.g. direct torque control [2006.01]
H02P 27/14	4-Punkt Untergruppe	 with three or more levels of voltage [2006.01]
H02P 27/16	2-Punkt Untergruppe	. . using ac to ac converters without intermediate conversion to dc (H02P 27/05 takes precedence) [2006.01]
H02P 27/18	3-Punkt Untergruppe	. . . varying the frequency by omitting half waves [2006.01]
H02P 29/00	Hauptgruppe	Arrangements for regulating or controlling electric motors, appropriate for both ac- and dc-motors (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; control of motors that can be connected to two or more different voltage or current supplies H02P 4/00 ; vector control H02P 21/00) [2006.01]
H02P 29/02	1-Punkt Untergruppe	. Providing protection against overload without automatic interruption of supply, e.g. monitoring [2006.01]
H02P 29/04	1-Punkt Untergruppe	. by means of a separate brake [2006.01]
H02P 31/00	Hauptgruppe	Arrangements for regulating or controlling electric motors not provided for in groups H02P 1/00-H02P 5/00 , H02P 7/00 or H02P 21/00-H02P 29/00 [2006.01]